

CLAIMS

1. A color correction apparatus comprising:

a color correction means for making a color correction
5 to an input image signal; and

a color gamut compression means for performing color
gamut compression on the color-corrected input image signal
based on data describing color reproduction characteristics so
that the color-corrected image data outputted from said color
10 correction means has a chromaticity range which is contained
in a color reproduction region which is based on said color
reproduction characteristics.

2. The color correction apparatus according to Claim 1,
15 characterized in that said color correction means is provided
with a color reproduction correction means for converting a
chromaticity range of the input image signal based on the data
describing the color reproduction characteristics.

20 3. The color correction apparatus according to Claim 1,
characterized in that said color correction means is provided
with a hue conversion means for converting a hue of the input
image signal based on data describing the hue to be converted
and an amount of adjustment.

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4. The color correction apparatus according to Claim 1,
characterized in that said color gamut compression means
performs the color gamut compression on the color-corrected
input image signal based on data describing color reproduction
30 characteristics of a color image display apparatus.

5. The color correction apparatus according to Claim 1, characterized in that said color gamut compression means determines a hue of the image data converted by said color correction means, acquires both a chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal, and a chromaticity range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color correction means based on the data describing the color reproduction characteristics, determines a convergence point from both a color reproduction region defined by the chromaticity range indicating said color reproduction characteristics corresponding to the hue of said input image signal, and a color reproduction region defined by the chromaticity range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color correction means, and performs the color gamut compression on the color-corrected image data outputted from said color correction means in a direction of said convergence point.

6. The color correction apparatus according to Claim 5, characterized in that said color gamut compression means acquires the chromaticity range indicating the color reproduction characteristics corresponding to the hue of the input image signal and the chromaticity range indicating the color reproduction characteristics corresponding to the hue of the image data converted by said color correction means, when the color reproduction region defined by the chromaticity range

indicating the color reproduction characteristics corresponding to the hue of said input image signal and the color reproduction region defined by the chromaticity range indicating the color reproduction characteristics
5 corresponding to the hue of said converted image data are expressed in a color space, determines a point of intersection where the color reproduction region for the hue of said input image signal and the color reproduction region for the hue of said converted image data intersect in a plane showing value
10 and saturation, determines a convergence point having a value equal to that of said point of intersection and being on a value axis showing said color space, and compresses the color reproduction region for the hue of said input image signal toward said convergence point.

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7. The color correction apparatus according to Claim 5, characterized in that said color gamut compression means acquires the chromaticity range indicating the color reproduction characteristics corresponding to the hue of the
20 input image signal and the chromaticity range indicating the color reproduction characteristics corresponding to the hue of the image data converted by said color correction means, when the color reproduction region defined by the chromaticity range indicating the color reproduction characteristics
25 corresponding to the hue of said input image signal and the color reproduction region defined by the chromaticity range indicating the color reproduction characteristics corresponding to the hue of said converted image data are expressed in a color space, determines a point of intersection
30 where the color reproduction region for the hue of said input

image signal and the color reproduction region for the hue of said converted image data intersect in a plane showing value and saturation, defines an arbitrary point on a straight line connecting said point of intersection with the chromaticity range indicating the color reproduction characteristics of the hue indicated by said converted image data, determines a convergence point having a value equal to that of said arbitrary point and being on a value axis showing said color space, and compresses the color reproduction region for the hue of said input image signal toward said convergence point.

8. The color correction apparatus according to Claim 1, characterized in that said color gamut compression means acquires a chromaticity range indicating first color reproduction characteristics of a hue of the input image signal based on data indicating the first color reproduction characteristics and describing color reproduction characteristics of a color image display apparatus, acquires a chromaticity range indicating second color reproduction characteristics data of a hue indicated by the image data converted by said color correction means based on data indicating the second color reproduction characteristics and describing color reproduction characteristics of an original image showing a color tone of a visually-identified image, acquires a convergence point from both a color reproduction region defined by the chromaticity range indicating the first color reproduction characteristics of the hue of said input image signal, and a color reproduction region defined by the chromaticity range indicating the second color reproduction characteristics data of the hue indicated by said corrected

image data, and compresses the color reproduction region defined by the chromaticity range indicating the first color reproduction characteristics of the hue of said input image signal toward the convergence point.

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9. The color correction apparatus according to Claim 1, characterized in that said color correction means acquires color adjustment data describing both a hue to be value-converted and an amount of adjustment for value, and has
10 a value conversion means for convert a value indicated by the input image signal based on said color adjustment data, and said color gamut compression means acquires a chromaticity range indicating color reproduction characteristics of a hue of the input image signal based on the data describing the color
15 reproduction characteristics, acquires a value-converted chromaticity range with reference to a look-up table in which a hue value-converted by said value conversion means is described, acquires a convergence point from both a color reproduction region defined by the chromaticity range
20 indicating the color reproduction characteristics of the hue of said input image signal and a color reproduction region defined by said value-converted chromaticity range, and compresses the color reproduction region defined by the chromaticity range indicating the color reproduction
25 characteristics of the hue of said input image signal toward the convergence point.

10. The color correction apparatus according to Claim 9, characterized in that said value conversion means determines
30 both a value of a hue selected by a user and a value of a hue

in a vicinity of the selected hue using a value look-up table in which a value-converted value is described.

11. The color correction apparatus according to Claim 9,
5 characterized in that said color correction means is provided with a chromaticity range conversion means for transforming a value axis indicating a color space, and said color gamut compression means acquires a convergence point on the value axis which is converted by said chromaticity range conversion means
10 from both the color reproduction region defined by the chromaticity range indicating the color reproduction characteristics of the hue of the input image signal expressed in said color space and the color reproduction region defined by the value-converted chromaticity range.

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12. A color correction apparatus comprising: a saturation conversion means for converting a saturation of an input image signal based on both color adjustment data describing both a hue to be saturation-converted and an amount of adjustment, and
20 color reproduction characteristics data describing color reproduction characteristics of a color image display apparatus.

13. A color correction method comprising:
25 a step of converting a hue indicated by image data using a hue conversion means;

a step of converting a value indicated by the image data acquired from said hue conversion means using a value conversion means;

30 a step of converting a saturation indicated by the image

data acquired from said value conversion means based on color reproduction characteristics data describing color reproduction characteristics of a color image display apparatus using a saturation conversion means; and

- 5 a step of carrying out color gamut compression so that the image data acquired from said saturation conversion means has a chromaticity range which is contained in a color reproduction region which is based on said color reproduction characteristics using a color gamut compression means.